THE SIPRO MID - TERM I EXAMINATIONS 2024

PRIMARY SEVEN MATHEMATICS

Time Allowed: *2 Hours 30 Minutes*

Index No.	EMIS No.						Personal No.		

Candidate's Name: _____

Candidate's signature: _____

District: _____

READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

1. This paper has two sections: **A** and **B**.
2. Section **A** has **20** questions **(40 Marks)**.
3. Section **B** has **12** questions **(60 Marks)**.
4. Attempt all questions in both sections. All answers to both sections **A** and **B** must be written in the spaces provided.
5. All answers must be written in blue or black ball point pens or ***ink***. Only diagrams and graph work must be done in ***pencil***.
6. Unnecessary ***alteration*** of work will lead to loss of marks.
7. Any ***handwriting*** that cannot be easily read may lead to loss of marks.
8. Do not fill anything in the boxes indicated: "FOR EXAMINER'S USE ONLY"

For Examiner's Use Only;

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Please turn over

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SECTION A: 40 MARKS

Attempt **all** questions in this section.

Questions **1** *to* **20** *carry* **two** *marks each.*

1. **Work out:** $3\ 2\ 3_{five} - 1\ 1\ 2_{five}$

3-2=1
2-1=1
3-1=2

$2\ 1\ 1_{five}$

2. **Simplify:** 3a + 2a - a.

3a+2a-a
(3a+2a)-a
5a-a
= 4a

3. **Work out:**

Years	Months
8	18
- 4	9
3	9

~~8+9=17÷12=1rem5~~
18-9=9

4. Find the Highest Common Factor of **18** and **24**.

2	18	24
3	9	12
	3	4

HCF = 2x3
HCF = 6.

5. Express **2:5** as a decimal fraction.

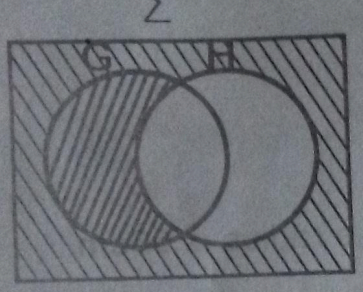
2:5 =
$\frac{2}{5}$ = 5 | 20 (0.4)
Ans = 20
00

6. Wakoko was born in 1986. Express his age now in **Roman** numerals.

2024
-1986
38 years

38 = 30 + 8
XXX VIII
38 = XXX VIII

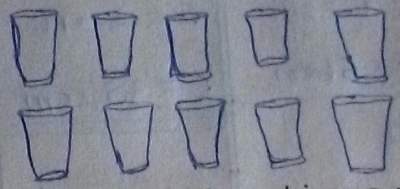
7. Describe the **shaded** region.



$(A \cup B)'$
Set H complement
H'

8. Given that  represents 7 glasses. **Draw** pictos to represent 70 glasses.

1 glass represents 7 glasses
70 glasses represents $\frac{70}{7_1}$
= 10 glasses.



9. Lopege sold 5 loaves of bread each at **Sh. 6,000** making a profit of Sh. 7500. At what price did he buy **each** loaf?

SP for 5 loaves of bread
5 × sh. 6000
sh 30000 =

~~profit~~ = SP
C.P. = SP − P
= sh 30000
− sh 7500
sh 22500

10. Calculate the square of 16.

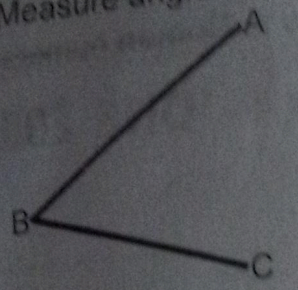
$16^2 = 16 \times 16$
$= 16$
$\times 16$
96
16
256

$16^2 = 256$.

11. Simplify: $-7 + -2$.

$-7 + -2$
$-7 - 2$
-9

12. Measure angle **ABC** in the figure below.



$\angle ABC = 52^\circ$

13. Solve the equation: $2y + 7 = 9$.

$2y + 7 = 9$

$2y + 7 - 7 = 9 - 7$

$2y = 2$

$\frac{2y}{2} = \frac{2}{2}$

$y = 1$

14. Calculate the circumference of a circle whose radius is **56cm**.

(Use $\pi = \frac{22}{7}$)

$C = \pi D = C = 2\pi r$

$C = \frac{22}{7} \times 2 \times 56cm$

$C = \frac{22}{7} \times 112$

$C = \frac{22}{7_1} \times \overset{16}{112}$

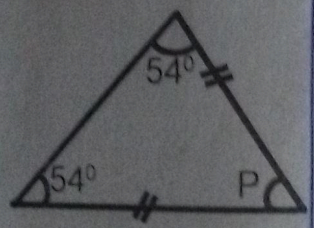
$C = 22 \times 16$

$C = 352cm$

S/W

$22 \times 16 = 132 + 220 = 352$

15. The triangle given is of an **isosceles** triangle. Find the size of angle P.



$P + 54^\circ + 54^\circ = 180^\circ$

$P + 108^\circ = 180^\circ$

$P + 108^\circ - 108^\circ = 180^\circ - 108^\circ$

$P = 72^\circ$

S/W

$180 - 108 = 072$

16. Peter is 24kg heavier than Mike. If their **total** weight is 100kg, what is the weight of Peter?

Peter	Mike	Total
$x+24$	x	100kg

$2x + 24 + x = 100$

$2x + 24 = 100$

$2x + 24 - 24 = 100 - 24$

$2x = 76$

S/W

$100 - 24 = 76$

$\frac{2x}{x} = \frac{\overset{38}{76}}{2_1}$

$x = 38$

Peter

$x + 24$

$38 + 24$

$62kg$

17. A football match started at **1125 Hrs** and ended at **1310 Hrs**. How long was the match?

Duration = Ending time − starting time

Hrs	min
~~13~~12	10+60
11	25

Hrs	Min
12	~~10~~ 70
− 11	25
1	45

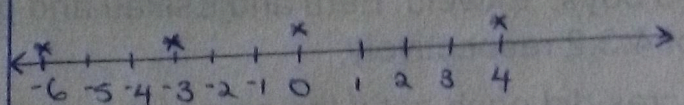
The match took 1 hour 45 minutes.

18. Arrange -3, 4, -6 and 0 in ascending order.

-3, 4, -6, 0

-6, -3, 0, 4

method II



-6, -3, 0, 4

19. **Work out:** $1\frac{2}{3} \times \frac{9}{10}$

$\frac{D \times W + N}{D} \times \frac{9}{10}$

$\frac{(3 \times 1) + 2}{3} \times \frac{9}{10}$

$\frac{5}{3} \times \frac{9}{10}$

$\frac{\cancel{5}^{1}}{\cancel{3}_{1}} \times \frac{\cancel{9}^{3}}{\cancel{10}_{2}}$

$\frac{1 \times 3}{1 \times 2}$

$\frac{3}{2}$

$\frac{3}{2} = 1\frac{1}{2}$

20. Expand **2364** using exponents.

3 2 1 0

2 3 6 4

$(2 \times 10^3) + (3 \times 10^2) + (6 \times 10^1) + (4 \times 10^0)$

SECTION B: 60 MARKS

Attempt **all** questions in this section.

Marks for **each part** *of the question are* **indicated** *in the brackets.*

21. **Use the shopping bill table below to answer the questions that follow.**

Item	Quantity	Unit cost	Amount
Pair of shoes	4 pairs of shoes	Sh. 15,000 per pair	Sh. 60,000
Shirts	2 shirts	Sh. 5000 per shirt	Sh. 10,000
Pair of trousers	2 pair of trousers	Sh. 20,000 per pair	Sh. 40,000
Belts	4 belts	Sh. 5,000 per belt	Sh. 20,000
Total expenditure			Sh. 130000

(a) Complete the above shopping bill table. (05 Marks)

Shoes: 4 × 15000 = 60,000

Shirts: 2 × 5000 = 10,000

trousers: 2 × 20,000 = 40,000

Belts: 4 × 5000 = 20,000

shoes =	60,000
Shirts =	10000
trousers =	40000
belts =	+ 20000
Total	130000

(b) If one had sh. 150,000, find the change. (01 Mark)

Change = 150,000 − 130000

= Sh 20000

22. A father had 3 boys. Ekwelu, Eeru and Esikau and gave the land to them in the ratio of 4:3:2 respectively,

(a) How many acres did each get if the size of the land was 36 acres? (03 Marks)

Total ratio

4+3+2 = 9

Ekwelu

$\frac{4}{9} \times 36$

$\frac{4}{9_1} \times \overset{4}{\cancel{36}}$

4×4 = 16 acres

Eeru

$\frac{3}{9} \times 36$

$\frac{3}{9_1} \times \overset{4}{\cancel{36}}$

3×4

12 acres

Esikau

$\frac{2}{9} \times 36$

$\frac{2}{9_1} \times \overset{4}{\cancel{36}}$

2×4

8 acres

(b) Express Eeru's acres as a percentage. (02 Marks)

Eeru

$\frac{12}{36_1} \times 100$

$\frac{\cancel{12}}{\cancel{36}_3} \times 100$

$\frac{1}{3} \times 100$

$\frac{33\frac{1}{\cancel{100}}}{3_1}$

$33\frac{1}{3}\%$

23. (a) Given that y > 2. Write the solution set for y. (02 Marks)

y > 2

y = {3, 4, 5, 6, 7, 8 ---}

(b) Think of a number, double it and add 4 to it, the result is 20. What is the number? (03 Marks)

let the no be y

(y×2)+4 = 20

2y+4 = 20

2y+4−4 = 20−4

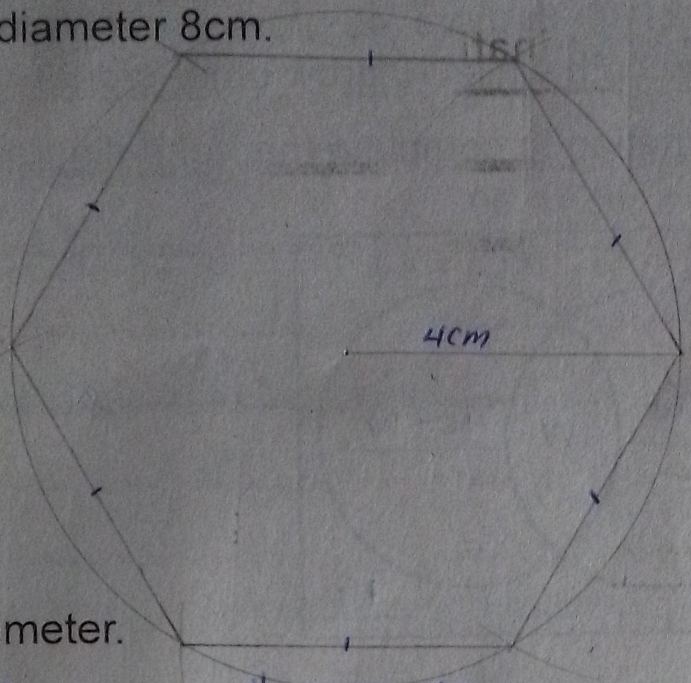
2y = 16

$\frac{2y}{2} = \frac{16}{2}$

y = 8

24. (Using a ruler, a pencil and a pair of compasses only, construct a regular hexagon of diameter 8cm. *(03 Marks)*

D = 2r
R = D/2
R = 8cm/2
R = 4cm



(b) Find its perimeter. *(02 Marks)*

P = s+s+s+s+s+s
P = (4cm+4cm)+(4cm+4cm)+(4cm+4cm)
P = 8cm+8cm+8cm
P = 24cm

Method II
P = 6sides
P = 6x4cm
P = 24cm

25. Samhong started his journey at **7:30a.m.** driving at a steady speed of **60km/h** from his home to town where he arrived at **10:00a.m.**

(a) Find the time he spent travelling. *(02 Marks)*

Duration	
Hrs	min
10	00
7	30
2	30

2hrs 30min
2½ hrs

(b) Calculate the **distance** he covered from home to town. *(02 Marks)*

D = S x T
D = 60km/h x 2½hrs
D = 60km/h x 5/2 h

D = 60km/1h x 5/2 h
D = 30km x 5
D = 150km

26.(a) **Work out:** $110_{two} - 11_{two}$ *(2 Marks)*

110 two
- 11 two
11 two

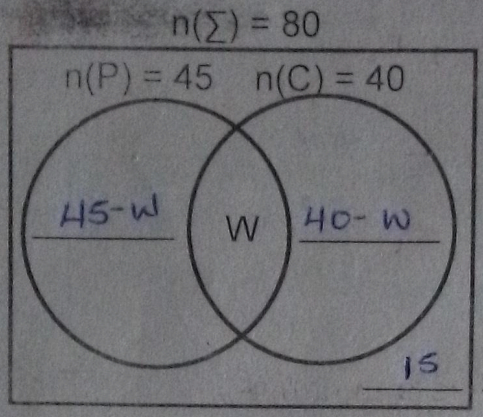
(b) Solve for **p**: 42p = 38. *(03 Marks)*

42p = 38
42p = 38
(4xp) + (2xp) = (3x10) + (8x1)
4p+2 = 38

4p+2 = 38
4p+2-2 = 38-2
4p/4 = 36/4
p = 9
p = Nine

27. In Omuriana village of 80 farmers, 45 grow sweet potatoes (P), 40 grow cassava (C), W grow both while 15 grow other crops.

(a) Use the above information to complete the Venn diagram below. (03 Marks)

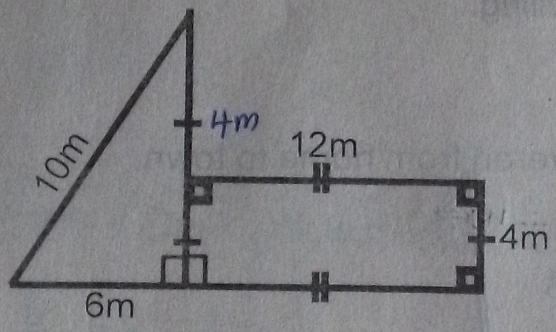


(b) Find the number of farmers who grow both crops. (02 Marks)

$45 - w + w + 40 - w + 15 = 80$
$45 + 40 + 15 - w = 80$
$85 + 15 - w = 80$
$100 - w = 80$
$100 - 100 - w = 80 - 100$
$-w = -20$
$\frac{-w}{-1} = \frac{-20}{-1}$
$w = 20$

20 farmers grow both crops.

28. **Use the figure below to answer the questions that follow.**



(a) Find the area of the figure. (03 Marks)

Area of triangle
$A = \frac{1}{2} \times b \times h$
$A = \frac{1}{2} \times 6m \times 8m$
$A = 3m \times 8m$
$A = 24m^2$

Area of rectangle
$A = L \times W$
$A = 12m \times 4m$
$A = 48m^2$

Total area
$24m^2 + 48m^2$
$72m^2$
$A = 72m^2$

(b) Work out the distance round the figure. (02 Marks)

$P = S + S + S + S + S + S$
$P = (10m + 4m) + (12m + 4m) + (12m + 6m)$
$P = 14m + 16m + 18m$
$P = 48m$

29. (a) **Work out:** (02 Marks)

$$\begin{array}{r} 56423 \\ +\ 7965 \\ \hline 64388 \\ \hline \end{array}$$

(b) Express **7036** in standard form. (02 Marks)

7036

$7.036 \times 10^3 \times 10 \times 10$

7.036×10^3

30. (a) The sum of **3** consecutive odd numbers is **57**. Find the number. (03 Marks)

Let the nos be y

1st	2nd	3rd	Total
y	y+2	y+4	57

$y + y+2 + y+4 = 57$

$y + y + y + 2 + 4 = 57$

$3y + 6 = 57$

$3y + 6 - 6 = 57 - 6$

$3y = 51$

$\frac{3y}{3} = \frac{51}{3}$

$y = 17$

1st no = 17

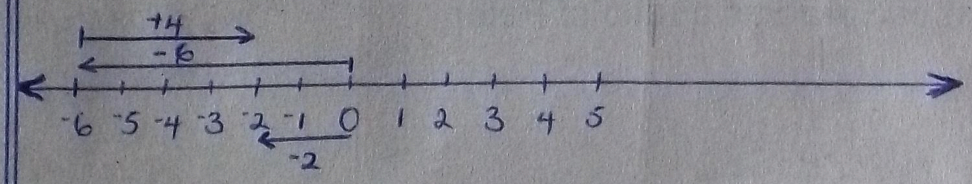
2nd no = 19

3rd no = 21

(b) Find the product of the smallest and largest numbers. (02 Marks)

$$\begin{array}{r} 21 \\ \times\ 17 \\ \hline 147 \\ +\ 210 \\ \hline 357 \\ \hline \end{array}$$

31. (a) Work out: $^{-}6 + {}^{+}4$ using a number line. (03 Marks)

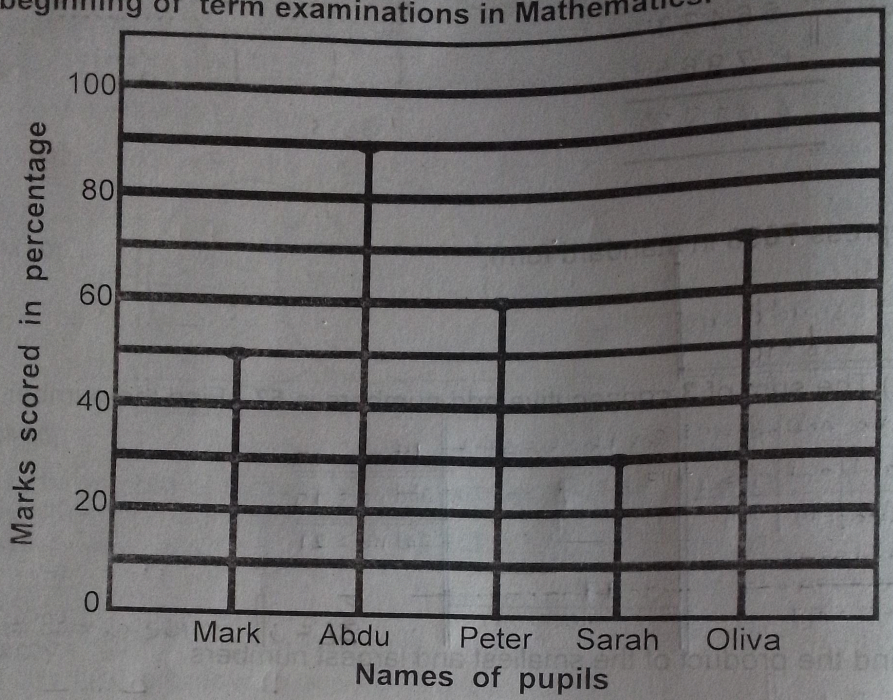


(b) A boy jumps 4 times backwards of 3 steps each. Find the total steps the boy made together. (02 Marks)

4 times × 3 steps

12 steps

32. The line graph below shows how different pupils scored in beginning of term examinations in Mathematics.



(a) What was the score of Abdu? (01 Mark)

Abdu scored 90%

(b) Express the score of Sarah as a ratio of Peter. (02 Marks)

Sarah peter 30/60

30 60 30/60 = 1/2

1:2

(c) Calculate the average score for all the pupils who sat the examination. (03 Marks)

Average = Items / Total items

Average = (50% + 90% + 60% + 30% + 70%) / 5

Average = 300% / 5

Average = 60%